U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Coastal Protection and Restoration Division
c/o EPA Region X (ECL-117)
1200 Sixth Avenue
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Dear Chip and Eric:

This letter provides **NOAA's comments on the Portland Harbor Superfund Site *Selected acute and chronic ecological screening levels (Eco SLs) for chemicals in water, Table 1, REVISED DRAFT*** ("Table 1" hereafter). The document, prepared by Windward Environmental LLC for the Lower Willamette Group (LWG), is dated May 25, 2006.

NOAA appreciates this opportunity to provide comments on the revised draft screening levels presented in Table 1. The following comments were developed by reviewing Table 1 and revisiting the draft technical memorandum of April 29, 2005 entitled *Process For Selecting Acute and Chronic Water Screening Levels For Portland Harbor Surface Water, Groundwater, and Transition Zone Water*. The latter ("technical memorandum" hereafter) describes the process that was used to select acute and chronic water screening levels for use in preliminary ecological evaluation of Round 2 data relating to surface water, groundwater, and transition zone water (in the biologically active zone, 0-1 ft) from Portland Harbor. Comments outlining our concerns follow.

Our overarching concern relates to how these screening values will be applied and how the corresponding results will be interpreted. For example, there is no discussion as to how acute versus chronic values will be applied. In our experience, it is preferable to apply only chronic values. Absent that, our usual approach would be to apply an acute value/10 ([acute value/10]). This approach ensures that the screening step produces sufficiently conservative results.

With respect to the April 2005 technical memorandum, we believe there are a few points that bear mentioning because they have implications for the application of the screening levels presented in Table 1. Our comments on this technical memorandum are limited to section 4,

page 9. In this paragraph, it is stated that "This screening will serve as one of multiple lines of evidence for determination of COPCs. For example, exceedance of an SL for a transition zone water sample might mean there will be a potential adverse effect on infaunal benthic invertebrates. This line of evidence will be weighed against results from bioassay tests using co-located sediments, measured chemical concentrations in the sediments compared to sediment guidelines, and invertebrate tissue concentrations compared to TRVs." While this approach may appear to be straightforward, it is not clear how the screening will be applied in the absence of contaminant-specific sediment quality guidelines or tissue TRVs. It is also unclear how VOCs, which are not expected to adhere to sediments or bioaccumulate in tissue, will be addressed in the screening process for water. Further explanation/clarification from LWG may be necessary.

Section 4 also states, "if an exceedance of AWQC is noted, a search for species-specific water quality values will be initiated. The location of exceedances will also be considered, including the suitability of the sample location as habitat for potentially impacted organisms." Relative to AWQC, which are the basis for promulgated state standards, this approach is not appropriate. For initial screening purposes in a remedial investigation, the question of whether a sample location represents habitat is irrelavent. If a sample exceeds a screening level, it should be considered as "screened in".

With respect to values presented in Table 1, NOAA provides the following specific comments:

It is not clear to us whether dissolved or total metals will be used. Clarification is requested.

The set of AWQC for semivolatile organochlorines appear to be problematic. The acute values should be halved. In addition, a less conservative Tier II value was selected over the AWQC. What is the explanation for this?

Aluminum should be pH normalized.

For antimony, a Tier II acute value of 180 ug/L is presented. The EPA proposed value for acute antimony concentration in water is 88 ug/L. Why was the former selected over the latter?

In the notes column for arsenic, there is a misattribution to *As(V)*. The derivation is actually from *As(III)*. Regardless, it is applied to total As.

The AWQC for mercury apply to total, but should be noted as not protective against food web biomagnification.

It should be noted that the chronic value of 5 ug/L for selenium applies to total.

Several chlorinated pesticides (aldrin, chlordane, etc) and silver have values derived under 1980 procedures. According to footnotes in *EPA 822-S-99-001 /National Recommended*

Water Quality Criteria – Correction, at least the acute values should be halved to be more consistent with the derivation of the 1985 procedures.

It is unclear to NOAA why total PCBs would have a value higher than one of the constituent values, namely Aroclor 1254, especially given the note that it applies to the sum of all Aroclors (i.e., the total should not be *less* toxic than one of its constituents). Please clarify and/or revise.

In several cases (Fe, methoxychlor, etc), an acute value is derived from a chronic value by multiplying the chronic value by a factor of 10x. While a 10x factor might be conservative in the inverse operation – deriving a chronic value from an acute value – this is not necessarily supported as a conservative approach for deriving acute values. The inherent issue is the presumed assumption regarding the shape (more specifically, the slope) of the dose-response curve. For instance, in the case of a benchmark often cited for dioxins (blue sac disease in lake trout fry), there is an extreme slope, such that the difference between a NOEL and 100% impact is only a 3x change in concentration. Thus, 10x the NOEL would be far from a conservative estimate of acute toxicity. A draft EPA document dealing with wildlife uncertainty factors (Office of Water, Health and Ecological Criteria Div., 30 June 1995) states that of 52 comparisons made with rats for 33 different chemicals, 96% of the LOEL to NOEL ratios were 5 or less. Similar analyses of data presented in the EPA document indicated that 50% of the ratios were 3 or less. So, a chronic to acute ratio of 3x to 5x, rather than 10x, would seem to be more appropriate.

Finally, the Table 1 notes indicate which criteria are for filtered samples, but it is not clear from the technical memorandum how this will be handled. In other words, there may be details in a sampling plan as to which type of data are being generated, but how the comparisons to benchmarks are made is not stated. Please provide clarification.

NOAA appreciates the opportunity to provide these comments. Please let me know if you have any questions.

Sincerely,

Robert Neely
NOAA Coastal Resource Coordinator

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